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of

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and

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for

EYEGLASS RETAINER WITH DUAL USE CONNECTORS

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BACKGROUND OF THE INVENTION

1. The Background of the Invention

[01] This invention is in the field of eyeglass retainers.

2. The Relevant Technology

[02] Eyeglass retainers are employed by eyeglass wearers to maintain their eyeglasses in a desired position on their body. The retainers can be used to maintain an eyeglass adjacent the eyes of a user during exercise, recreation, employment, or during a variety of activities that require the user's glasses to be snugly affixed to the user's head.

[03] By connecting the first and second opposing temples or earpieces of an eyeglass onto respective opposing first and second connectors of an eyeglass retainer, and cinching a slide of the retainer against the user's head, the retainer maintains the eyeglass on the user's face in a desired position.

[04] Eyeglass retainers may also be employed to maintain a user's eyeglass suspended from the user's neck in the event the user does not want to wear the eyeglass, but wants to have the eyeglass conveniently ready for immediate use.

[05] Some eyeglass retainers grip the earpiece of an eyeglass, while other retainers grip the temple of the eyeglass. Each orientation has its own distinct advantages.

[06] Typical eyeglass retainers, however, are limited to a certain orientation in which they can grip a particular eyeglass. What is therefore needed is an eyeglass retainer that is not limited to a certain orientation that may be employed to grip an eyeglass.

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BRIEF SUMMARY OF THE INVENTION

[07] It is therefore an object of the invention to provide an improved eyeglass retainer.

[08] It is another object of the invention to provide an eyeglass retainer that may be used to maintain an eyeglass on the body of a user in a variety of different positions.

[09] It is another object of the invention to provide an eyeglass retainer having multiple uses.

[010] It is another object of the invention to provide an eyeglass retainer configured to connect to either the temple or the earpiece of an eyeglass.

[011] It is another object of the invention to provide an eyeglass retainer configured to be coupled to temples and/or earpieces having varying thicknesses.

[012] An eyeglass retainer of the present invention is configured to retain an eyeglass in a desired position on the body of a user, such as the head or neck of the user. The retainer includes: (i) a cord having a first end and a second end; (ii) a first connector coupled to the first end of the cord; and (iii) a second connector coupled to the second end of the cord. The first and second connectors each have: (i) a tubular wall defining a hollow chamber configured to receive an eyeglass earpiece therein; and (ii) an expandable opening extending through the tubular wall. The expandable opening may comprise: (i) a hole extending through the tubular wall; and (ii) a slit extending through the tubular wall in communication with the hole.

[013] The expandable opening is configured such that an eyeglass earpiece can be selectively moved through the opening such that the temple of the eyeglass is then mounted within the hollow chamber defined by a tubular wall of the connector. The earpiece can also be moved back through the opening and into the hollow chamber.

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[014] Thus, the retainer can grip either the earpieces or the temples of a particular eyeglass, as selected by a user. The versatile and multi-use eyeglass retainer thereby retains the eyeglass in one of a plurality of possible orientations on the body of the user.

[015] These and other objects and features of the present invention will become more fully apparent from the following description and appended claims, or may be learned by the practice of the invention as set forth hereinafter.

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BRIEF DESCRIPTION OF THE DRAWINGS

[016] In order that the manner in which the above-recited and other advantages and features of the invention are obtained, a more particular description of the invention briefly described above will be rendered by reference to specific embodiments thereof which are illustrated in the appended drawings. Understanding that these drawings depict only typical embodiments of the invention and are not therefore to be considered limiting of its scope, the invention will be described and explained with additional specificity and detail through the use of the accompanying drawings in which:

[017] Figure 1 is a perspective view of an eyeglass retainer of the present invention.

[018] Figure 2A is a view of an eyeglass retainer as shown in Figure 1 with the earpieces of an eyeglass inserted within opposing connectors of the eyeglass retainer. The earpieces are shown in phantom lines within their respective connectors.

[019] Figure 2B is a view of an eyeglass retainer as shown in Figure 1 with the temples of an eyeglass extended through opposing connectors of the eyeglass retainer, such that the connectors couple to the temples of the eyeglass.

[020] Figure 3A is a cutaway view of an eyeglass retainer connector as shown in Figure 1 with an eyeglass earpiece mounted therein, as shown in phantom lines. A distal tip 14a of the cord is mounted within a cord receiving chamber of the connector.

[021] Figure 3B is a cutaway view of an eyeglass retainer connector as shown in Figure 1 with a eyeglass temple mounted therein, illustrating the gripping action of the connector onto the temple when the earpiece is extended past the opening. The opening is shown in an expanded orientation, as opposed to Figure 3A.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[022] An eyeglass retainer 10 of the present invention is shown in Figure 1. Retainer 10 is configured to retain an eyeglass in a desired position on the body of a user. Eyeglass retainer 10 can retain an eyeglass on the head of a wearer or suspend an eyeglass from the neck of a wearer, for example, in a variety of different manners. Retainer 10 can also be held in the hand of a user or placed on a hook or other structure to store an eyeglass. A variety of other uses are also possible.

[023] Eyeglass retainer 10 includes (i) a cord 12 having a first end 14 and a second end 16; (ii) a first connector 18 coupled to first end 14 of cord 12; and (iii) a second connector 20 coupled to second end 16 of cord 12. Connectors 18, 20 selectively couple to different portions of an eyeglass, as will be discussed in additional detail below.

[024] Each of the first and second connectors 18, 20 comprise a cord receiving end 22, 24 and an eyeglass receiving end 26, 28. Each end is configured to receive either a respective end of the cord or a respective portion of an eyeglass frame.

[025] Each cord receiving end 22, 24 is configured to receive a respective end of cord 12 therein. In one embodiment, each such end 26, 28 comprises a hollow chamber configured to receive a cord end therein. In one such embodiment, an adhesive is applied to the ends 14, 16 of cord 12 (or to ends 22, 24 of connectors), after which the ends 14, 16 are mounted within respective ends 22, 24 of connectors 18, 20, thereby coupling cord 12 to connectors 18, 20. However, a variety of different methods may be employed for coupling a cord to connectors, such as by configuring the connectors to extend integrally from the cord. Each eyeglass receiving end may also include an accordian shaped exterior portion 30, 32 that may enable that portion to bend more readily.

[026] Each eyeglass receiving portion 26, 28 of each connector 18, 20 is connected to a respective cord receiving portion 22, 24. In one embodiment, an inner partition separates each hollow cord receiving end 22, 24 from each respective hollow eyeglass receiving end 26, 28.

[027] With continued reference to Figure 1, each eyeglass receiving portion 26, 28 comprises (i) a tubular wall 34, 36 defining a hollow chamber 38, 40 configured to receive an eyeglass earpiece therein; and (ii) an expandable opening 42, 44 extending through the respective tubular wall 34, 36. Each expandable opening 42, 44 may comprise: (i) a hole 46, 48 extending through the respective tubular wall 34, 36; and (ii) a slit 50, 52 extending through each tubular wall 34, 36.

[028] Each expandible opening 42, 44 is configured such that an eyeglass earpiece can be selectively moved through the respective opening 42, 44. Once the earpiece is moved through the opening, the temple of the eyeglass is then positioned within the hollow chamber 38, 40 of the respective connector 18, 20. Consequently, retainer 10 is configured such that retainer connectors 18, 20 selectively grip at least one of: (i) first and second earpieces of an eyeglass; and (ii) first and second temples of an eyeglass. The eyeglass retainer thereby retains the eyeglass in one of a plurality of possible orientations on the body of the user.

[029] Each hole 46, 48 is defined by a substantially circular wall 46a, 48a. Each slit is also defined by respective adjacent walls 50a, 50b or 52a, 52b (see also Fig. 3B). The wall 46a, 48a of each hole 46, 48 is contiguous with the adjacent walls 50a, 50b or 52a, 52b of each respective slit. Thus, each hole and slit combination forms an opening comprising (i) a hole; and (ii) a slit that communicates with the hole. In other words, each opening 42, 44 is

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defined by the wall defining each hole and the walls defining each slit. Since each slit 50, 52 communicates with its respective hole 46, 48, each slit 50, 52 can expand as an earpiece extends through its adjacent hole 46, 48. Each slit 50, 52 can expand as an earpiece that is larger than its adjacent hole 46, 48 extends through the respective opening 42, 44.

[030] When an earpiece that is smaller than a respective hole passes through the hole, the opening corresponding to that hole does not necessarily expand. However, when an earpiece larger than the hole passes through the opening, the slit generally expands. Thus, each opening 42, 44 is an expandable opening as a result of the unique and novel hole/slit combination featured herein.

[031] Connectors 18, 20 each comprise a resilient, deformable material such that the earpiece, and/or temple can be pressed therein and such that the walls of each connector 18, 20 can expand and resiliently compress against the earpiece and/or temple placed therein, as shown in respective Figures 2A-3B. As the tubular walls of connectors 18, 20 compress against a respective earpiece and/or temple, connectors 18, 20 thereby grip the earpiece and/or temple.

[032] Connectors 18, 20 each preferably comprise an elastomeric material, such as thermoplastic elastomer, or a similar material, although a variety of different materials can be employed for connectors 18, 20.

[033] An example of retainer 10 being coupled in a first possible position to an eyeglass 60 is shown in Figure 2A. Eyeglass 60 comprises a frame 62 comprising a first temple 64, a first earpiece 66 (shown in phantom lines in Figure 2A) coupled to first temple 64, a second temple 68, and a second earpiece 70 (also as shown in phantom lines in Figure 2A) coupled to the temple 68. Figure 2A demonstrates an example of a use of retainer 10 in which

earpieces 66, 70 are mounted within respective eyeglass receiving ends 26, 28. In Figure 2A, earpieces 66, 70 are not extended through expandable openings 42, 44.

[034] In the embodiment of Figure 2B, however, a second possible position is shown. Earpieces 66, 70 are shown as having been extended through respective openings 42, 44 such that respective connectors 18, 20 grip temples 64, 68. Thus, as shown in Figure 2B, the connectors 18, 20 of retainer 10 may be mounted on temples 64, 68 to thereby grip temples 64, 68, or, as shown in Figure 2A, connectors 18, 20 may be mounted on respective earpieces 66, 70 to thereby grip respective earpieces 66, 70.

[035] Also as shown, connectors 18, 20 are angled such that, as shown in Figure 2B, as retainer 10 grips temples 64, 68, the cord receiving ends 22, 24 of connectors 18, 20 dip conveniently below temples 64, 68.

[036] The difference between the mounting of Figures 2A and 2B is further illustrated in Figures 3A and 3B. Figures 3A-3B only feature one connector 18, although second connector 20 may be configured the same or similar thereto. As shown in Figure 3A, earpiece 66 (shown in phantom lines) is mounted within connector 18. As shown in Figure 3B, however, earpiece 66 has been extended through opening 42 such that temple 64 is mounted within connector 18.

[037] Once the earpiece and/or temple is extended through opening 42, opening 42 can expand, as shown in Fig. 3B. As depicted in Fig. 3B, each slit 50 intersects its respective hole 46 such that slit 50 and hole 46 can form an effectively larger opening than that formed merely by hole 46. However, since slit 50 is in the form of a slit, opening 42 can be small when smaller temples 66 are extended therethrough (and can thereby snugly grip the temple) or can be expanded when larger temples 66 are extended therethrough, and can thereby

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accommodate and grip the larger temples. In addition to being expandible, openings 42, 44 are also preferably resilient, to thereby grip a variety of different temples that are extended therethrough. Thus, expandible openings 42, 44 accomodate a variety of different sized and shaped earpieces and/or temples.

[038] Each connector 18, 20 may be injection or insertion molded or may be made through a variety of different methods. Each connector may thus comprise an injection molded member having a first hollow chamber (which receives an end of the cord therein – see tip 14a of end 14 cord 12 in Fig. 3A) and a second hollow chamber (which receives an earpiece of an eyeglass therein).

[039] The term "eyeglass" as used in this specification and the appended claims may include any object that can be worn or placed adjacent the eyes of a user, such as objects commonly known as an eyeglass, eyeglasses, glasses, eyewear, goggles, sunglasses, eye protectors, safety glasses, shades, or a variety of other such commonly used objects.

[040] The term "earpiece" as used in this specification and the appended claims may include, for example, any portion of an eyeglass that can fit on or adjacent the ear of a user, that can stabilize an eyeglass on the head of a user, or that otherwise extends from a temple of an eyeglass. The earpiece is not required to be bent with respect to the temple. The term "temple" as used in this specification and the appended claims may include the portion of an eyeglass frame that is adjacent to and extends rearwardly from the lens holding portion of the frame, that is adjacent to the temple of a user when the eyeglass is in use, or that is positioned between an earpiece of the eyeglass and the lens holding portion of the eyeglass. The temple often (but not necessarily) has a hinge thereon such that the eyeglass can be conveniently folded. In yet another embodiment, the earpiece comprises the proximal end

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of an eyeglass frame support that extends proximally with respect to one or more lenses while the temple comprises the distal end of an eyeglass frame support that extends proximally with respect to one or more lenses.

[041] Retainer 10 further comprises a slider 54 (Fig. 1) configured to selectively cinch retainer 10 snugly against the head of a user. Slider 54 has first and second tubular chambers 56, 58 through which respective cord portions pass. Slider 54 slides over opposing portions of cord 12, then cinches adjacent the head of a user, thereby causing retainer 10 to tighten on the user's head.

[042] Slider 54 may have a variety of different configurations that enable it to cinch retainer 10 tightly against the head of a user. In one embodiment, however, no slider is employed. In such an embodiment, retainer 10 can be used to suspend an eyeglass on the neck of a user when the eyeglass is not in use and/or can be worn about the neck while the eyeglass is in use as fail safe to prevent the eyeglass from contacting the ground if it falls from the user's face. In one embodiment, slider 54 is mounted on cord 12 (or cord ends 14, 16 are extended through slider 54), after which connectors 18, 20 are coupled to cord ends 14, 16.

[043] Cord 12 may comprise a variety of different elongate members that extend between first and second connectors. For example, cord 12 may comprise a flexible braided line, a wire, a chain, a rope, a string, an elongate elastomeric member, a leather or cloth member, a strand, or a variety of other elongate members comprised of a variety of different materials that can serve as a retainer cord. A variety of additional examples of materials that can be employed for a cord 12 of the present invention.

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[044] In the embodiment of eyeglass retainer 10 shown in Figures 1-3B, each connector 18, 20 is non-integrally connected to its corresponding cord end 14, 16, such as through the use of an adhesive. Tip 14A of end 14 of cord 12 is shown in phantom lines mounted in cord receiving end 22 in Figures 3A and3B. However, in another embodiment, the cord is integerally coupled to one or more connectors.

[045] Connector 18 is an example of first means for selectively coupling to one of: (i) the temple; and (ii) the earpiece of an eyeglass. Connector 20 is an example of second means for selectively coupling to one of (i) the temple; and (ii) the earpiece of an eyeglass. A variety of other examples may be employed, however, as will be appreciated by one skilled in the art in light of the disclosure herein.

[046] The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

What is claimed and desired to be secured by United States Letters Patent is:

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